

Appl. No. 09/308,829
Amendment dated January 30, 2004
Reply to Office Action of September 5, 2003

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-44. (Cancelled)

45. (Currently amended) A composition comprising an~~An~~ isolated Streptococcal pyrogenic exotoxin type C (SPE-C toxin) comprising an amino acid substitution at aspartic acid-12 of SEQ ID NO: 2, and a carrier.

46. (Currently amended) A composition comprising an~~The~~ isolated Streptococcal pyrogenic exotoxin type C (SPE-C) toxin ~~of claim 45, comprising substitution of wherein the amino acid substitution comprises~~ alanine for aspartic acid-12 of SEQ ID NO: 2, and a carrier.

47. (Currently amended) A composition comprising an~~An~~ isolated Streptococcal pyrogenic exotoxin type C (SPE-C toxin) comprising an amino acid substitution at asparagine-38 of SEQ ID NO: 2, and a carrier.

48. (Currently amended) A composition comprising an~~The~~ isolated Streptococcal pyrogenic exotoxin type C (SPE-C) toxin ~~of claim 47, comprising substitution of wherein the amino acid substitution comprises~~ aspartic acid for asparagine-38 of SEQ ID NO: 2, and a carrier.

49. (Currently amended) A composition comprising an~~An~~ isolated Streptococcal pyrogenic exotoxin type C (SPE-C toxin) comprising an amino acid substitution at tyrosine-15 of SEQ ID NO: 2 and at asparagine-38 of SEQ ID NO: 2, and a carrier.

50. (Currently amended) A composition comprising an~~The~~ isolated Streptococcal pyrogenic exotoxin type C (SPE-C) toxin ~~of claim 49, comprising substitution of wherein the~~

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~~amino acid substitution comprises~~ serine or alanine for tyrosine-15 of SEQ ID NO: 2 and aspartic acid for asparagine-38 of SEQ ID NO: 2, and a carrier.

51. (Currently amended) A composition comprising an ~~The isolated Streptococcal pyrogenic exotoxin type C (SPE-C) toxin of claim 49, comprising substitution of wherein the~~ amino acid substitution comprises serine for tyrosine-15 of SEQ ID NO: 2 and serine for asparagine-38 of SEQ ID NO: 2, and a carrier.

52. (Currently amended) A composition comprising an ~~The isolated Streptococcal pyrogenic exotoxin type C (SPE-C) toxin of claim 49, further comprising an amino acid~~ substitution at tyrosine-15 of SEQ ID NO: 2, asparagine-38 of SEQ ID NO: 2, and histidine-35 of SEQ ID NO: 2, and a carrier.

53. (Currently amended) A composition comprising an ~~The isolated Streptococcal pyrogenic exotoxin type C (SPE-C) toxin of claim 52, wherein the amino acid substitution~~ comprises substitution of alanine for tyrosine-15 of SEQ ID NO: 2, alanine for histidine-35 of SEQ ID NO: 2, and aspartic acid for asparagine-38 of SEQ ID NO: 2, and a carrier.

54. (Currently amended) A composition comprising an ~~An isolated Streptococcal pyrogenic exotoxin type C (SPE-C toxin) comprising an amino acid substitution at tyrosine-17 of~~ SEQ ID NO: 2 and at asparagine-38 of SEQ ID NO: 2, and a carrier.

55. (Currently amended) A composition comprising an ~~The isolated Streptococcal pyrogenic exotoxin type C (SPE-C) toxin of claim 54, wherein the amino acid substitution~~ comprises substitution of serine or alanine for tyrosine-17 of SEQ ID NO: 2 and aspartic acid for asparagine-38 of SEQ ID NO: 2, and a carrier.

56. (Currently amended) A composition comprising an ~~The isolated Streptococcal pyrogenic exotoxin type C (SPE-C) toxin of claim 54, wherein the amino acid substitution~~

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comprising substitution of serine for tyrosine-17 of SEQ ID NO: 2 and serine for asparagine-38 of SEQ ID NO: 2, and a carrier.

57. (Currently amended) A composition comprising an~~An~~ isolated Streptococcal pyrogenic exotoxin type C (SPE-C toxin) comprising an amino acid substitution at tyrosine-15 of SEQ ID NO: 2, at histidine-35 of SEQ ID NO: 2, and at asparagine-38 of SEQ ID NO: 2, and a carrier.

58. (Currently amended) A composition comprising an~~The~~ isolated Streptococcal pyrogenic exotoxin type C (SPE-C) toxin ~~of claim 45, wherein the amino acid substitution~~ comprising substitution of alanine for tyrosine-15 of SEQ ID NO: 2, alanine for histidine-35 of SEQ ID NO: 2, and aspartic acid for asparagine-38 of SEQ ID NO: 2, and a carrier.

59. (Currently amended) A composition comprising an~~An~~ isolated Streptococcal pyrogenic exotoxin type C (SPE-C toxin) comprising an amino acid substitution at aspartic acid-12 of SEQ ID NO: 2, at tyrosine-15 of SEQ ID NO: 2, at tyrosine-17 of SEQ ID NO: 2, at histidine-35 of SEQ ID NO: 2, at asparagine-38 of SEQ ID NO: 2, or at up to three of these amino acids of SEQ ID NO: 2, and a carrier.

60-63. (Cancelled)

64. (Currently amended) A composition comprising an~~The~~ isolated Streptococcal pyrogenic exotoxin type C (SPE-C) toxin ~~of claim 59, wherein the amino acid substitution~~ comprising substitution of alanine for tyrosine-15 of SEQ ID NO: 2, and a carrier.

65-99. (Cancelled)

100. (New) An isolated Streptococcal pyrogenic exotoxin type C comprising an amino acid substitution at aspartic acid-12 of SEQ ID NO: 2, at tyrosine-15 of SEQ ID NO: 2, at

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tyrosine-17 of SEQ ID NO: 2, at histidine-35 of SEQ ID NO: 2, or at asparagine-38 of SEQ ID NO: 2;

wherein the isolated Streptococcal pyrogenic exotoxin type C is 99% identical to SEQ ID NO: 2; and the isolated Streptococcal pyrogenic exotoxin type C has reduced toxicity compared with wild-type.

101. (New) The isolated Streptococcal pyrogenic exotoxin type C of claim 100, comprising substitution at tyrosine-15 of SEQ ID NO: 2, at histidine-35 of SEQ ID NO: 2, and at asparagine-38 of SEQ ID NO: 2.

102. (New) The isolated Streptococcal pyrogenic exotoxin type C of claim 101, comprising substitution of tyrosine-15 of SEQ ID NO: 2 with alanine, histidine-35 of SEQ ID NO: 2 with alanine, and asparagine-38 of SEQ ID NO: 2 with aspartate.

103. (New) The isolated Streptococcal pyrogenic exotoxin type C of claim 100, comprising substitution at tyrosine-15 of SEQ ID NO: 2 and at asparagine-38 of SEQ ID NO: 2.

104. (New) The isolated Streptococcal pyrogenic exotoxin type C of claim 103, comprising substitution of tyrosine-15 of SEQ ID NO: 2 with alanine and asparagine-38 of SEQ ID NO: 2 with aspartate.